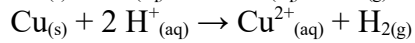
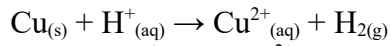
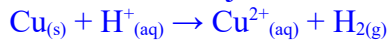


Problema 467: Ajusta la reacción siguiente y di si será espontánea, utilizando las  $\Delta G^{\circ}f$



$$\Delta G^{\circ}_R = \sum n_p \cdot \Delta G^{\circ}_{f \text{ prod}} - \sum n_r \cdot \Delta G^{\circ}_{f \text{ react}}$$

$$\Delta G^{\circ}_R = 1 \text{ mol} \cdot \Delta G^{\circ}_f [\text{Cu}^{2+}_{(aq)}] + 1 \text{ mol} \cdot \Delta G^{\circ}_f [\text{H}_{2(g)}] - 1 \text{ mol} \cdot \Delta G^{\circ}_f [\text{Cu}_{(s)}] - 2 \text{ mol} \cdot \Delta G^{\circ}_f [\text{H}^+_{(aq)}]$$

$$\Delta G^{\circ}_R = 1 \text{ mol} \cdot \Delta G^{\circ}_f [\text{Cu}^{2+}_{(aq)}] = 1 \text{ mol} \cdot (+65,0 \frac{\text{kJ}}{\text{mol}}) = +65,0 \text{ kJ}$$

Si la variación de energía libre es positiva indica que **la reacción no es espontánea** a temperatura ambiente